

## EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

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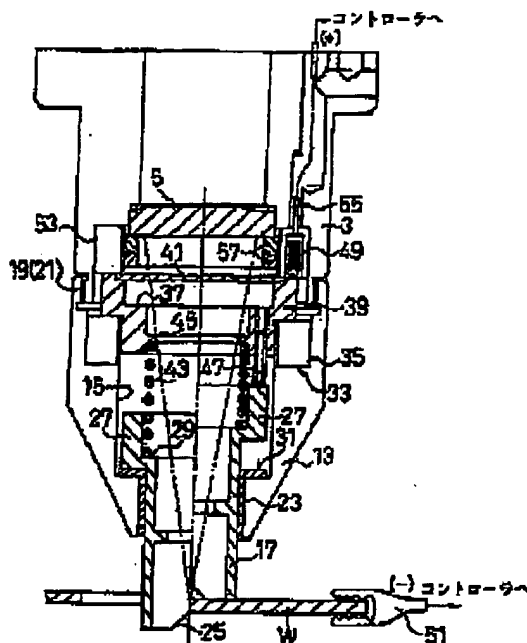
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TITLE : HANDY LASER HEAD FOR YAG  
LASER



**ABSTRACT :** PROBLEM TO BE SOLVED: To reduce the exposure of an operation due to the scattered reflected light of laser by providing a contactor freely movably forwards and backwards at the lower end of a laser head, electrically detecting contact between the contactor and a work, and thereby automatically stopping the laser generator at the time other than that of welding.

**SOLUTION:** A hollow cylindrical contactor holder 13 is provided in the lower end of a condensing lens holder 3 of a laser machining head, with a metallic hollow cylindrical contactor 17 fitted inside the lower end and attached projectingly and freely movably forwards and backwards by a spring 23 elastically provided in the contactor holder 13. Simultaneously, an electrical contact 49 is buried at the lower end of the condensing lens holder 3, with an electrical circuit formed between that contact 49 and the contactor 17 and connected to a controller. In the meantime, the work W is also connected to the controller, with the presence or absence of contact detected electrically between the tip end of the contactor 17 and the work W, so that the laser generator is stopped in the case of non-contact state. In addition, at the time of welding, scattered reflected light is shielded by the tubular wall of the contactor 17 and prevented from being emitted outside.

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